

Date: Tuesday, 21/04/2009 4:01:15 PM
 User: Julie Dawson

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	BLADE FITTING
Job Number :	47348		
Estimate Number :	12299		
P.O. Number :		Part Number :	D3488041
This Issue :	21/04/2009	S.O. No. :	
Prsht Rev. :	NC	Drawing Number :	D3488 / DSK101
First Issue :	/ /	Project Number :	N/A
Previous Run :	44530	Drawing Revision :	B / D
Written By :		Material :	
Checked & Approved By :	<u>JD 09.04.21</u>	Due Date :	10/05/2009
Comment :	Est Rev:A New Issue 06-02-28 JLM Est Rev:B As per Rev B 06-03-30 JLM Est Rev:C Now On Doosan Lathe JLM Verified BY:DD		

Qty: 20 Um: Each

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D6103003	Round Billet, Aluminum
-----	----------	------------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s) ,
 Alluminum Round Billet D6103-003
 Batch: ~~347477~~ B47477

09.05.12

2.0	DOOSAN LATHE	DOOSAN LATHE
-----	--------------	--------------



Comment: DOOSAN LATHE
 1-Turn as per Dwg DSK 101 & Folio FA625
 2-Deburr

09.05.12

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

20
 09.05.12

4.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine as per Folio FA625 & Dwg D3488
 2-Deburr

09/05/12
 20
 09/05/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 21/04/2009 4:01:15 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE FITTING

Job Number: 47348

Part Number: D3488041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



09/05/27

DT 09/05/28



20

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

09/06/08

20

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

FL

09/06/09

20

8.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M111472

START TIME:

1:00pm

OVEN TEMPERATURE:

320°F

FINISH TIME:

1:30pm

FL

09-06-09

X20

9.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FL

09/06/20

20

10.0

ALS71032225

INSERT



Comment: Qty.: 4.0000 Each(s)/Unit Total: 80.0000 Each(s)

Pick:

Qty Part Number Description Batch

4 ALS7-1032-225 Insert

M110768

FL

11.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg D3488

FL

09/06/10

20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 21/04/2009 4:01:15 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE FITTING

Job Number: 47348

Part Number: D3488041

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

QC5

INSPECT WORK TO CURRENT STEP



090012 (20)



Comment: INSPECT WORK TO CURRENT STEP

13.0

PACKAGING 1

PACKAGING RESOURCE #1



(20)

Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

FP-8

FD 09/06/15

14.0

QC21

FINAL INSPECTION/W/O RELEASE



09/06/15

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MR 09-06-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

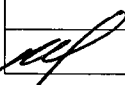
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 47348
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number: D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
Ø2.150	+/-0.005	2.150	/			
Ø2.780	+/-0.005	2.780	/			
Ø3.125	+/-0.010	3.125	/			
Ø3.346	+/-0.010	3.346	/			
0.125 x 45°	+/-0.010 x +/-0.1°	.125 x 45°	/			
8.000	+0.030/-0.000	8.016	/			
9.250	+/-0.010	9.250	/			
0.188	+/-0.010	.188	/			
R0.032	+/-0.010	R0.032	/			
R0.062	+/-0.010	R.062	/			
Ø0.297	+0.005/-0.001	.297	/			
Ø0.430	+/-0.010	.430	/			
0.100	+/-0.010	.100	/			
0.125	+/-0.010	.125	/			
2.620	+/-0.010	2.620	/			
3.500	+/-0.010	3.500	/			
1.005	+/-0.010	1.005	/			
Ø0.484	+0.005/-0.001	.484	/			
1.180	+/-0.010	1.180	/			
3.150	+/-0.010	3.150	/			
3.070	+/-0.010	3.070	/			
R0.063	+/-0.010	R.063	/			
 09-05-13						

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____



Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____



NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

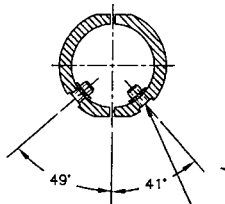
NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 4.7348
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number: D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 2 of 2

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Milling Section						
Ø0.508	+0.006/-0.001	.509	✓			
0.750	+/-0.010	.743	✓			
1.500	+/-0.010	1.499	✓			
11.18	+/-0.030	11.183	✓			
R0.062	+/-0.010	0.0625	✓			
0.125	+/-0.010	.130	✓			
0.590	+/-0.010	.589	✓			
0.793	+/-0.010	.801	✓			
1.351	+/-0.010	1.3475	✓			
1.317	+/-0.010	1.3185	✓			
1.802	+/-0.010	1.804	✓			

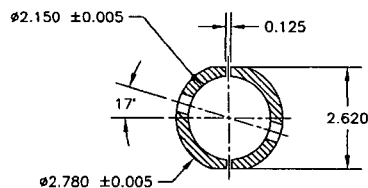
Measured by: 	Audited by: 	Prototype Approval:	N/A
Date: 09/05/27	Date: 07/06/08	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.03.31	New Issue	KJ/JLM	
B	08.09.19	Reformat P/O D3488-041	KJ/JLM	
C	08.12.02	Dimension 8.000 removed	KJ/JLM 	



SECTION B-B

Ø0.297
C'BORE Ø0.430 x 0.100
INSTALL ALS4-1032-225 (OR AKS4-1032-225
OR ALS7-1032-225 OR AKS7-1032-225)
INSERTS AFTER FINISH
(4 PLACES)



SECTION A-A

D3488-041/-042 BLADE FITTING ASSEMBLY PARTS LIST

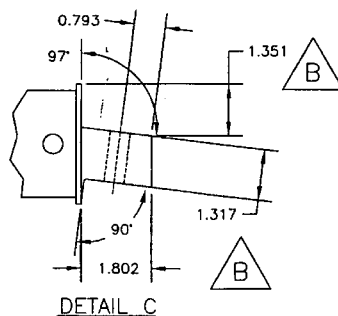
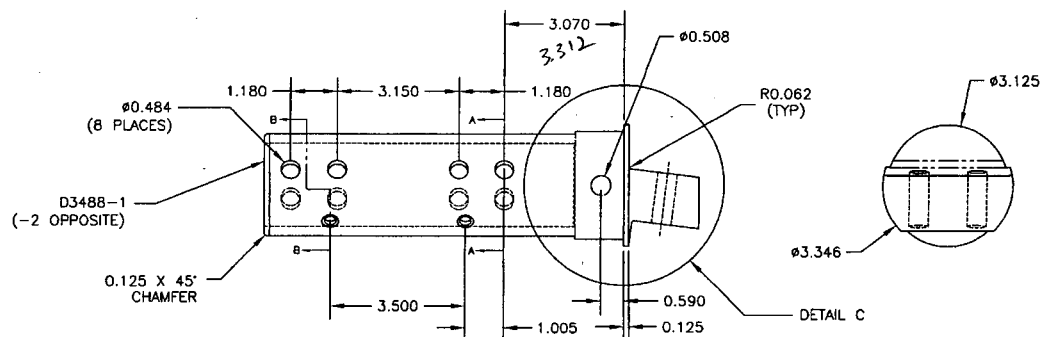
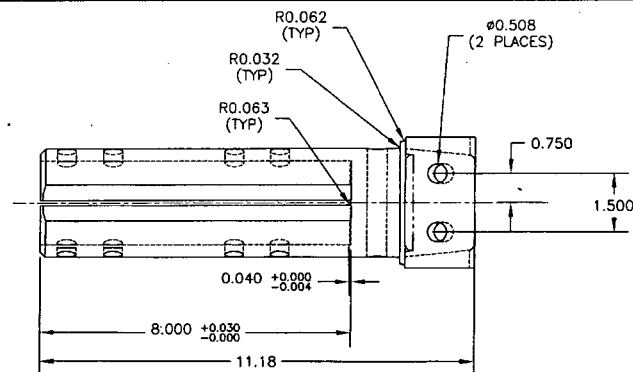
QTY -041	QTY -042	PART NUMBER	DESCRIPTION
X		D3488-041	BLADE FITTING ASSEMBLY (LH)
	X	D3488-042	BLADE FITTING ASSEMBLY (RH)
1		D3488-1	BLADE FITTING (LH)
	1	D3488-2	BLADE FITTING (RH)
4	4	ALS4-1032-225 or AKS4-1032-225 or ALS7-1032-225 or AKS7-1032-225	INSERT

D3488-041/-042 BLADE FITTING

- MATERIAL: MAKE D3488-1/-2 FROM ALUMINUM 7075-T7351 ROUND BAR
PER QQ-A-225/9
(REF. DART MATERIAL SPEC M7075T73R)
ACID ETCH, ALODINE PER DART QSI 005
POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 008
- FINISH:
- BREAK UNMARKED SHARP EDGES 0.010 TO 0.020
- INSTALL INSERTS AFTER POWDER COAT
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
DART AEROSPACE
PORT HADLOCK, WA

484/2 .242
= .215



DETAIL C

D3488-041 SHOWN (D3488-042 OPPOSITE)

RELEASED
06.03.15 PH
PER DS
ICN #737

B	06.03.15	CHANGE THICKNESS
A	05.12.20	NEW ISSUE
DESIGN	PH	DRAWN BY PH
CHECKED	PH	APPROVED
DATE	06.03.15	TITLE
		BLADE FITTING
		DART AEROSPACE USA, INC. PORT HADLOCK, WA
		DRAWING NO. D3488
		REV. B
		SHEET 1 OF 1
		SCALE 1:3

COPYRIGHT © 2005 BY DART AEROSPACE USA, INC.
 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL
 AND IS SUPPLIED ON THE EXPRESS CONDITION
 THAT IT IS NOT TO BE USED FOR ANY PURPOSE
 OR COPIED OR COMMUNICATED TO ANY OTHER
 PERSON WITHOUT WRITTEN PERMISSION FROM
 DART AEROSPACE USA, INC.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

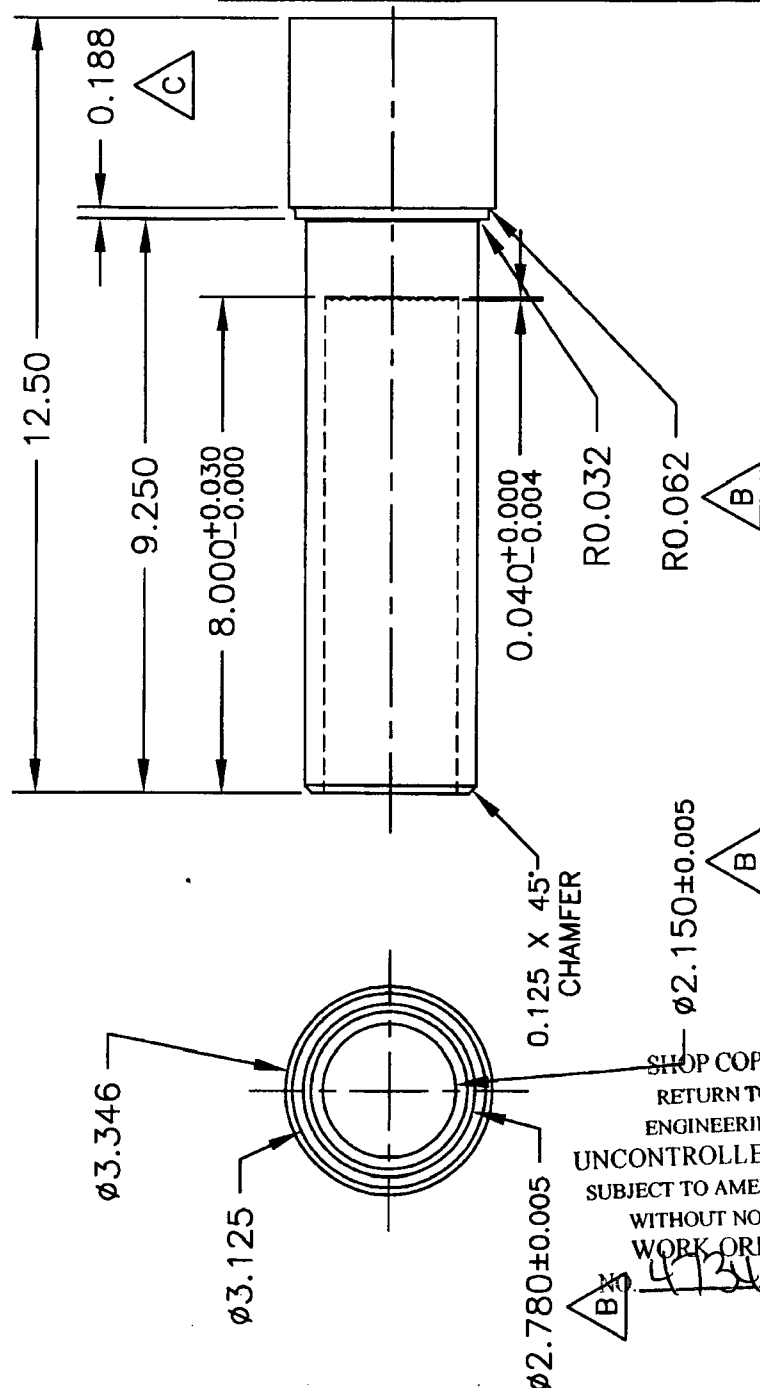
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. DSK 101	REV. D SHEET 1 OF 1
DATE 06.05.09		TITLE D3488-1/-2 TURNING DETAIL	SCALE 1:3
A	05.12.21	NEW ISSUE	
B	06.03.02	ADD TOLERANCES AND RADIUS	
C	06.04.17	0.188 WAS 0.125	
D	06.05.09	REMOVE DIAMETER FOR CHAMFER	

06.05.09 [Signature]



MAKE FROM ALUMINUM 7075-T7351 ROUND BAR PER QQ-A-225/9
(REF. DART MATERIAL SPEC M7075T73R)

FINISH: NONE

BREAK UNMARKED SHARP EDGES 0.010 TO 0.020

ALL DIMENSIONS ARE IN INCHES

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

DSK 101

Copyright © 2005 by DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.